



# **Lessons Learned from Implementing Standard CMMI Assessment Method for Process Improvement (SCAMPI) at WR-ALC**

**Bonnie D. Bollinger**



# Topics of Discussion

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## Background

- Objectives
- Phase I
- Phase II

## Lessons Learned

- Planning
- Training
- Implementation
- Follow-on Activities

## Conclusion



# **Background - 1**

## **Pilot Assessment Objectives**

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**Provide feedback to the CMMI Product Development/Product Team on:**

- **appropriateness of CMMI model**
- **appropriateness of assessment method**

**Provide findings to the organization to understand strengths & improvement opportunities relative to CMMI**

**Provide data to make business decision to support new CMMI model**



# **Background - 2**

## **CMMI Pilot Assessments**

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### **Phase I (Enterprise-Wide)(F-15, Avionics, Electronic Warfare, Special Operations)**

- **Conducted 12-30 Jun 00**
- **Utilized draft CMMI-SE/SW/IPPD V0.9, continuous representation**
- **Involved 58 interviewees - 13 sessions (7 follow-up sessions)**
- **Included 24 process areas**
- **Team consisted of internal members, SEI, OO-ALC, Private Contractors**
- **Reviewed 240 documents (20 questionnaires)**
- **Created 403 observations**
- **Team worked 148 hours in 2 week period**



# **Background - 3**

## **CMMI Pilot Assessments**

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### **Phase II (Special Operations Forces SPO)**

- **Conducted 2-13 Apr 01**
- **Utilized draft CMMI-SE/SW/IPPD/A V1.02d, continuous representation**
- **Involved 47 interviewees - 12 sessions (1 follow-up session)**
- **Included 17 process areas**
- **Team consisted of internal members and representatives from SEI, OO-ALC, WR-ALC**
- **Reviewed 125 documents (13 questionnaires)**
- **Created 346 observations**
- **Team worked 129 hours in 2 week period**



# Lessons Learned - 1

## Planning

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### Planning the Assessment

- Consider narrow enough **scope** to provide meaningful info to the organization; yet broad enough to determine next steps (CMMI process areas)
- Select **focus projects** from different phases of the lifecycle (organizational coverage)
- Determine assessment **schedule** based upon non-crucial project deadlines or holidays (including pre-on site dates for training, etc)
- Develop detailed **schedule** using historical data to estimate schedule for data gathering, note-tagging, consolidation, validation, briefings, and ratings



# Lessons Learned - 2

## Planning

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### Planning the Assessment, cont'd

- Select conference rooms for **interviews** that provide privacy and will be available
- Provide **war room** to accommodate team activities (doc review, translating notes, developing observations, discussions, etc)
- Choose **assessment team** members that possess knowledge and experience from organization, CMMI, technical disciplines, assessment method, and can work as a team
- Brainstorm possible **risks**; plan mitigation strategies for high risk areas



# Lessons Learned - 3

## Planning

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### Planning the Assessment, cont'd

- Keep organization **informed** of upcoming events - management and workforce (staff meetings, commander's call, etc)
- Determine method of administering CMMI Assessment Questionnaire (**CAQ**) and to whom - use group environment if possible
- Plan time for **follow-on interviews**
- Develop the **assessment plan** based upon sponsor's needs and method requirements





# Lessons Learned - 4

## Model Training

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### CMMI Training

- Provide *Intro to CMMI* Training
  - assessment team (mandatory)
  - key organizational personnel
- Discuss **organizational implementation** of practices in process areas
- Promotes **common understanding**
  - model
  - organizational implementation
  - alternate practices



# Lessons Learned - 5 Method Training

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## SCAMPI Training

- Provide **training** and **exercises** in assessment method to team members/alternates
- Determine **schedule** to best fit member's needs - consider time to "**internalize**" training
- Determine **mini-team structure** based upon method exercises, team personalities, etc
- Determine **data collection techniques** (tools, documentation access, reports)
- Solicit recommendations for **candidates** to be interviewed or administered questionnaire
- Review, revise **assessment plan**
- Solicit team **commitment** to fulfill plan



# Lessons Learned - 6 Implementation

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## Implement the Plan

- **Follow** the plan - needs to be approved by sponsor and team lead
- Keep organization **informed** of assessment dates, schedule of events
- Assign a **Site Coordinator** to ensure needed process/project data is available and to secure needed facilities/supplies
- Request an **Administrative Assistant** to notify people of interviews, provide assistance with briefings, librarian duties, refreshments



# Lessons Learned - 7 Implementation

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## Implement the Plan, cont'd

- Review and **revise the plan** as appropriate
  - Detailed schedule may need to be revised to accommodate team's needs or emergency situations
  - Some consolidation sessions may take longer than others, based upon data gathering sessions
  - Query team members to determine what is working well and what needs to be changed for possible plan revision
  - Review risk areas to determine if approaching risk thresholds and select appropriate mitigation



# Lessons Learned - 8 Implementation

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## Implement the Plan, cont'd

- **Have fun**
  - Learning experience - model, method, organization
  - Opportunity to make lasting friendships and professional contacts
- Consolidation takes a lot of time, but it appears to be easier to obtain consensus, if a **single observation** is written for each implementation of the practice rather than a paragraph addressing all elements of the practice
- Encourage all interviewees to attend **draft findings** - last data gathering session



## **Lessons Learned - 9**



# **Unique to SPO with Integrated Teams - 1**

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### **Integrated Product Team (IPT) Leads**

- Interviewed as Project Leads since they had ultimate responsibility for the weapon system

### **Multiple Program Managers**

- Interviewed as Functional Area Representatives to represent modifications, acquisitions, repairs, etc to respective IPTs

### **Integrated Product and Process Development (IPPD) Process Areas**

- Mission/vision/goals often satisfied as standard operating procedure for IPT project performance

### **Systems Engineering**

- Some practices may be performed organically; others performed by contractor - alternate practices



## **Lessons Learned - 10**



# **Unique to SPO with Integrated Teams - 2**

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### **Increased Number of Practices and Process Areas**

- **Train team to apply responses concerning practices to multiple areas**
  - **A response concerning team communication mechanisms could probably apply to project management practices, engineering practices, IPPD practices (if they operate as IPTs)**
  - **This requires experience and expert model knowledge**

### **Length of Assessment Period**

- **Sponsors may be willing to extend assessment period to three weeks due to increased value of model**
- **Alternate assessment methods available**



# Lessons Learned - 11 Follow-on Activities

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## Follow-on Activities

- Meet with Sponsor and Staff in **Executive Session** to provide additional information on assessment - maintain confidentiality
- Return all **documentation** from library to owners
- Team members draft **recommendations** to appropriate findings, **feedback forms** prior to leaving site
- Lead Assessor provides **Confidence Report** to Sponsor and **PAIS package** to SEI Repository





# Conclusion

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**Continuous representation allows organizations more flexibility in prioritizing process areas based upon business needs**

**Integrated Model allows organizations to capitalize on their process improvement initiatives for the multiple disciplines within their business**

**Special Ops SPO (LU) has prioritized assessment findings and have planned the next process improvement cycle using the CMMI**

**Software organization (LY) has begun action planning to transition to CMMI**



# Contact



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**Ms BonniJean D. Bollinger**  
**USAF, WR-ALC (Retired)**  
**Rt Four, Box 152 Hudson Jones Rd**  
**Cochran, GA 31014**  
**Phone: (478)934-7454**  
**E-Mail: [bonniebo@accucomm.net](mailto:bonniebo@accucomm.net)**